8-Port 10/100Mbps 802.3af / 802.3at PoE +
1-Port 10/100/1000Mbps Desktop Switch

FGSD-910P / FGSD-910HP

User's Manual

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FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Energy Saving Note of the Device

This power required device does not support Standby mode operation.

For energy saving, please remove the power cable to disconnect the device from the power circuit.

Without removing power cable, the device will still consuming power from the power source. In the view of Saving the Energy and reduce the unnecessary power consuming, it is strongly suggested to remove the power connection for the device if this device is not intended to be active.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste; WEEE has to be collected separately.

Revision

PLANET 8-Port 10/100Mbps 802.3af / 802.3at PoE + 1-Port 10/100/1000Mbps Desktop Switch User's Manual

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1. Introduction

1.1 Checklist

Check the contents of your package for the following parts:

- FGSD-910P / FGSD-910HP x 1
- User's Manual x 1
- Power Cord x 1
- Two 19" Rack-mounting Brackets with Attachment Screws x 8

If any of these pieces are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

The term **"PoE Ethernet Switch"** mentioned in this user's manual also means the FGSD-910P / FGSD-910HP.

1.2 Product Description

Centralized Power Distribution for Ethernet Networking

The FGSD-910P / FGSD-910HP, a new member in the PLANET 802.3af / 802.3at PoE Fast Ethernet Switch family, is an **8-port 10/100Mbps 802.3af / 802.3at Power over Ethernet + 1-Gigabit Port Switch** with a total of 130 watts of PoE budget, which is an ideal solution to fulfilling the demand of sufficient PoE power for network applications with Fast Ethernet speed transmission. The eight 802.3af / 802.3at PoE ports provide PoE power injector function which is able to drive 8 IEEE 802.3af compliant powered devices or 4 IEEE 802.3at compliant powered devices (FGSD-910HP only). The FGSD-910P / FGSD-910HP also provide a simple, cost-effective and non-blocking wire-speed performance. It comes with a 12-inch metal compact housing, suitable for desktop deployment in SOHO office or department network application.

Perfectly Integrated Solution for IP PoE Camera and NVR System

Different from the general IT industrial PoE Switch which usually comes with 12 or 24 PoE ports, the FGSD-910P / FGSD-910HP provides eight 802.3af / 802.3at PoE ports for catering to small scale of IP Surveillance networks at a lower total cost. The FGSD-910P / FGSD-910HP comes with high performance switch architecture and 130-watt PoE power budget. The recorded video files from 8 PoE IP Cameras can be powered by the FGSD-910P / FGSD-910HP and saved in the 8-channel NVR system or surveillance software to perform comprehensive security monitoring. For instance, one FGSD-910P / FGSD-910HP can be combined with one 8-Channel NVR

and 8 PoE IP cameras as a kit for the administrators to centrally and efficiently manage the surveillance system in the local LAN and the remote site via Internet.

Easy Cable Connection

With data and power over Ethernet from one unit, the FGSD-910P / FGSD-910HP reduces cabling requirements and eliminates the need for dedicated electrical outlets on the wall, ceiling or any unreachable place. A wire that carries both data and power can lower the installation costs, simplify the installation effort and eliminate the need for electricians or extension cords. Providing 8 PoE interfaces, the FGSD-910P / FGSD-910HP is ideal for small businesses and workgroups requiring deploying the PoE for the wireless access points, IP-based surveillance camera or IP phones in any places easily, efficiently and cost-effectively.

1.3 Features

■ RJ-45 Interface

- ☐ 8-Port 10/100Mbps Fast Ethernet Switch
- ☐ 8-Port supports 48V DC power to PoE Powered Device (FGSD-910P)
- ☐ 8-Port supports 56V DC power to PoE Powered Device (FGSD-910HP)
- ☐ 1-Port 10/100/1000Mbps Gigabit Ethernet Switch

■ Power over Ethernet

- ☐ Complies with IEEE 802.3af / 802.3at Power over Ethernet End-Span PSE
- ☐ Up to 8 IEEE 802.3af devices powered
- ☐ Supports PoE Power up to 15.4 watts for each PoE port
- ☐ Up to 4 IEEE 802.3at devices powered (FGSD-910HP only)
- ☐ Supports PoE Power up to 30 watts for each PoE port (FGSD-910HP only)
- ☐ 130-watt PoE budget
- ☐ Auto detects powered device (PD)
- ☐ Circuit protection prevents power interference between ports
- ☐ Remote power feeding up to 100m

■ **Switching**

☐ Hardware based 10/100Mbps Auto-Negotiation and Auto MDI/MDI-X (Port 1 to Port 8)

☐ Hardware based 10/100/1000Mbps Auto-Negotiation and Auto MDI/MDI-X (Port 9)

☐ Flow control for Full Duplex operation and back pressure for Half Duplex operation

☐ Integrates address look-up engine, supporting 4K absolute MAC addresses

☐ Automatic address learning and address aging

■ **Hardware**

☐ 12-inch desktop size, 1U height

☐ LED indicators for system power, per port PoE ready and PoE activity, speed, Link / Act

☐ 1 silent FAN to provide stable and efficient power performance

1.4 Specifications

Model	FGSD-910P	FGSD-910HP
Hardware Specification		
Network Connector	8-Port RJ-45 for 10/100Base-TX (Port 1 to Port 8) 1-Port RJ-45 for 10/100/1000Base-T (Port 9)	
PoE Inject Port	8-Port with 802.3af PoE injector function	8-Port with 802.3at PoE injector function
LED Display	System: Power (Green) Per PoE port: PoE (Orange) LNK/ACT (Green) Gigabit port: Speed (Green) LNK/ACT (Green)	
Switch Architecture	Store and Forward switch architecture	
MAC Address Table	4K MAC address table with Auto learning function	
Switch Fabric	3.6Gbps	
Switch Throughput	2.67Mpps@64Bytes	
Flow Control	Back pressure for Half-Duplex. IEEE 802.3x Pause Frame for Full-Duplex	
Power Requirements	AC 100~240V, 50/60Hz, 2A max.	

Power Consumption	150 watts / 511BTU	
Dimensions (W x D x H)	280 x 180 x 43mm (W x D x H), 1U height	
Weight	1.7kg	
Power over Ethernet		
PoE Standard	IEEE 802.3af Power over Ethernet / PSE	IEEE 802.3at Power over Ethernet / PSE
PoE Power Supply Type	End-Span	End-Span
PoE Power Output	Per Port 48V DC, 350mA. Max. 15.4 watts	Per Port 56V DC, 600mA. Max. 30 watts
Power Pin Assignment	1/2(+), 3/6(-)	1/2(+), 3/6(-)
PoE Power Budget	130 watts (at room temperature)*	130 watts (at room temperature)*
Max. number of Class 1 PD	8	8
Max. number of Class 2 PD	8	8
Max. number of Class 3 PD	8	8
Max. number of Class 4 PD	-	4
Standard Conformance		
EMI Safety	FCC Class A, CE	
Operating Environment	0 ~ 50 degrees C	
Storage Environment	-10 ~ 70 degrees C	
Operating Humidity	5 ~ 95%, Relative Humidity, non-condensing	
Storage Humidity	5 ~ 95%, Relative Humidity, non-condensing	
Standard Compliance	IEEE 802.3 IEEE 802.3u IEEE 802.3ab IEEE 802.3x IEEE 802.3af IEEE 802.3at	Ethernet Fast Ethernet Gigabit Ethernet Flow Control Power over Ethernet High Power over Ethernet (FGSD-910HP only)

* Remarks: POE Power budget may be reduced if the operating temperature rises.

2. Hardware Description

This product provides three different running speeds – 10Mbps and 100Mbps at port 1 to port 8, 10/100/1000Mbps at port 9 and automatically distinguishes the speed of incoming connection.

This section describes the hardware features of the FGSD-910P / FGSD-910HP. For easier management and control of the switch, familiarize yourself with its display indicators, and ports. Front panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the FGSD-910P / FGSD-910HP, please read this chapter carefully.

2.1 Front Panel

The Front Panel of the FGSD-910P / FGSD-910HP PoE Ethernet Switch consists of 8x Auto-Sensing 10/100Mbps Ethernet RJ-45 Ports and 1x Auto-Sensing 10/100/1000Mbps Ethernet RJ-45 Port. The LED Indicators are also located on the front panel of the PoE Ethernet Switch.

Figure 2-1: FGSD-910P Switch Front Panel

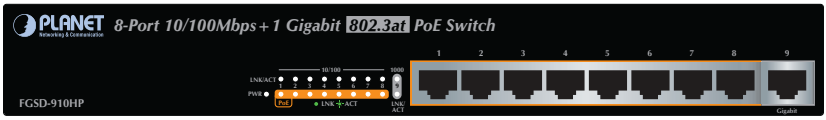


Figure 2-2: FGSD-910HP Switch Front Panel

2.1.1 LED Indicators

■ **System**

LED	Color	Function
PWR	Green	Light: Indicates the switch has power.

■ **Per 10/100Mbps Port**

LED	Color	Function
LNK/ACT	Green	**Light:** Indicates the link through that port is successfully established at 10/100Mbps full duplex mode. **Blink Slowly:** Indicates the link through that port is successfully established at 10/100Mbps half duplex mode. **Blink Fast:** Indicates that the switch is actively sending or receiving data over that port.
PoE	Orange	**Light:** Indicates the port is providing 48V (FGSD-910P) / 56V (FGSD-910HP) DC in-line power.

■ **Per 10/100/1000Mbps Port**

LED	Color	Function
Speed	Green	**Light:** Indicates the link through that port is successfully established at 1000Mbps. **Blink Slowly:** Indicates the link through that port is successfully established at 100Mbps. **Off:** Indicate the link through that port is successfully established at 10Mbps.
LNK/ACT	Green	**Light:** indicates the link through that port is successfully established **Blink:** Indicates that the switch is actively sending or receiving data over that port.

2.2 Rear Panel

The rear panel of the PoE Ethernet Switch indicates an AC inlet power socket, which accepts input power from 100 to 240V AC, 50-60Hz, 2A (FGSD-910P) or 100 to 240V AC, 50-60Hz, 2.5A (FGSD-910HP).

Figure 2-3: FGSD-910P Switch Rear Panel

Figure 2-4: FGSD-910HP Switch Rear Panel

Power Notice

The device is a power-required device, meaning it will not work till it is powered. If your networks should be active all the time, please consider using UPS (Uninterrupted Power Supply) for your device.
It will prevent you from network data loss or network downtime. In some area, installing a surge suppression device may also help to protect your FGSD-910P / FGSD-910HP from being damaged by unregulated surge or current to the FGSD-910P / FGSD-910HP or the power adapter.

Before startup

Before your installation begins, please refer to the following for your cabling:

10/100Base-TX (Port 1 to Port 8)

All 10/100Base-TX ports come with Auto-Negotiation capability. They automatically support 100Base-TX and 10Base-T networks. Users only need to plug a working network device into one of the 10/100Base-TX ports, and then turn on the PoE Ethernet Switch. The port will automatically run in 10Mbps, 20Mbps, 100Mbps or 200Mbps after negotiating with the connected device.

10/100/1000Base-T (Port 9)

The 10/100/1000Base-T port comes with Auto-Negotiation capability, which automatically supports 1000Base-T, 100Base-TX and 10Base-T networks. Users only need to plug a working network device into the 10/100/1000Base-T port, and then turn on the PoE Ethernet Switch. The port will automatically run in 10Mbps, 20Mbps, 100Mbps or 200Mbps and 1000Mbps or 2000Mbps after negotiating with the connected device.

Cabling

Each 10/100Base-TX and 10/100/1000Base-T port uses RJ-45 sockets -- similar to phone jacks -- for connection of unshielded twisted-pair cable (UTP). The IEEE 802.3 / 802.3u / 802.3ab Fast / Gigabit Ethernet standard requires Category 5 UTP for 100Mbps 100Base-TX. 10Base-T networks can use Cat.3, 4, 5 or 1000Base-T uses 5/5e/6 UTP (see table below). Maximum distance is 100 meters (328 feet).

Port Type	Cable Type	Connector
10Base-T	Cat 3, 4, 5, 2-pair	RJ-45
100Base-TX	Cat.5 UTP, 2-pair	RJ-45
1000Base-T	Cat.5/5e/6 UTP, 4-pair	RJ-45

Any Ethernet devices like hubs/PCs can connect to the FGSD-910P / FGSD-910HP PoE Ethernet Switch by using straight-through wires. The nine RJ-45 ports are auto-MDI/MDI-X, which can be used on straight-through or crossover cable.

2.3 Desktop Installation

To install the PoE Ethernet Switch on desktop, simply follow the following steps:

Step 1: Attach the rubber feet to the recessed areas on the bottom of the PoE Ethernet Switch, as shown in Figure 2-5.

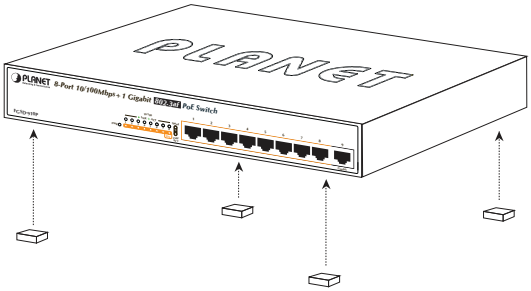


Figure 2-5: Place the PoE Ethernet Switch on the Desktop

Step 2: Place the PoE Ethernet Switch on desktop near an AC power source.

Step 3: Keep enough ventilation space between the PoE Ethernet Switch and the surrounding objects.

Note

When choosing a location, please keep in mind the environmental restrictions discussed in Chapter 1, Section 4 under Specifications.

Step 4: Connect your PoE Ethernet Switch to 802.3af / 802.3at complied Powered Devices (PD) and other network devices.

A. Connect one end of a standard network cable to the 10/100 RJ-45 ports or 10/100/1000 port on the Front of the PoE Ethernet Switch.

B. Connect the other end of the cable to the network devices such as printer servers, workstations, router, etc.

Connection to the PoE Ethernet Switch requires UTP Category 5 network cabling with RJ-45 tips. For more information, please see the Cabling Specifications in Appendix A.

Step 5: Supply power to the PoE Ethernet Switch.

A. Connect one end of the power cable to the PoE Ethernet Switch.

B. Connect the power plug of the power cable to a standard wall outlet.

When the PoE Ethernet Switch receives power, the Power LED should remain solid Green.

2.4 Rack Mounting

To install the PoE Ethernet Switch in a 19-inch standard rack, follow the instructions described below.

Step 1: Place your PoE Ethernet Switch on a hard flat surface, with the front panel positioned towards your front side.

Step 2: Attach a rack-mount bracket to each side of the PoE Ethernet Switch with supplied screws attached to the package. Figure 2-6 shows how to attach brackets to one side of the PoE Ethernet Switch.

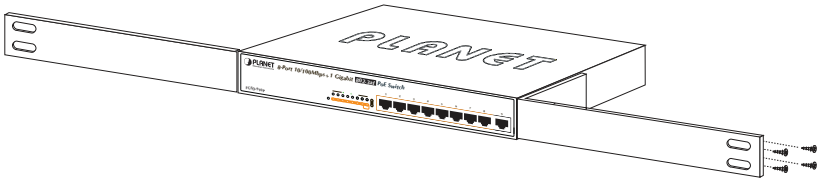


Figure 2-6: Attaching the Brackets to the PoE Ethernet Switch

You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate the warranty.

Step 3: Secure the brackets tightly.

Step 4: Follow the same steps to attach the second bracket to the opposite side.

Step 5: After the brackets are attached to the PoE Ethernet Switch, use suitable screws to securely attach the brackets to the rack, as shown in Figure 2-7.

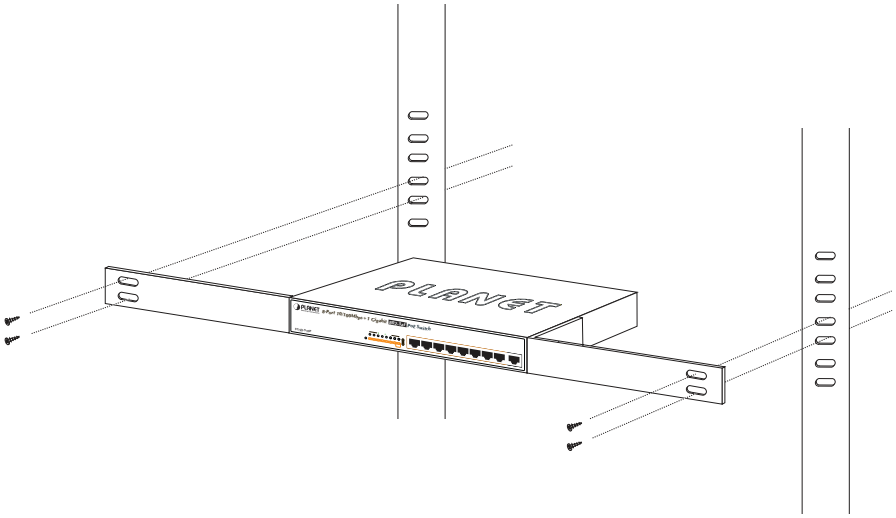


Figure 2-7: Mounting the PoE Ethernet Switch in a Rack

Step 6: Proceeds with Step 4 and Step 5 of session 2.3 Desktop Installation to connect the network cabling and supply power to your PoE Ethernet Switch.

2.5 Product Application

2.5.1 802.3af PoE IP Surveillance in Public Transportation

Providing up to eight 802.3af / 802.3at PoE, in-line power interfaces and 1 Gigabit TP interface, the PoE Ethernet Switch can easily build a power centrally controlled IP Camera system for the enterprises. It can work with 8-Channel NVR and surveillance software to perform comprehensive security monitoring. For instance, one PoE Ethernet Switch can combine with one 8-Channel NVR; that is, each of its PoE port can link to a specific 802.3af PoE IP camera for the administrators to centrally and efficiently manage the surveillance system in one site. The 1 Gigabit TP interface in the PoE Ethernet Switch also provides Gigabit TP connection for uplink to public server groups.

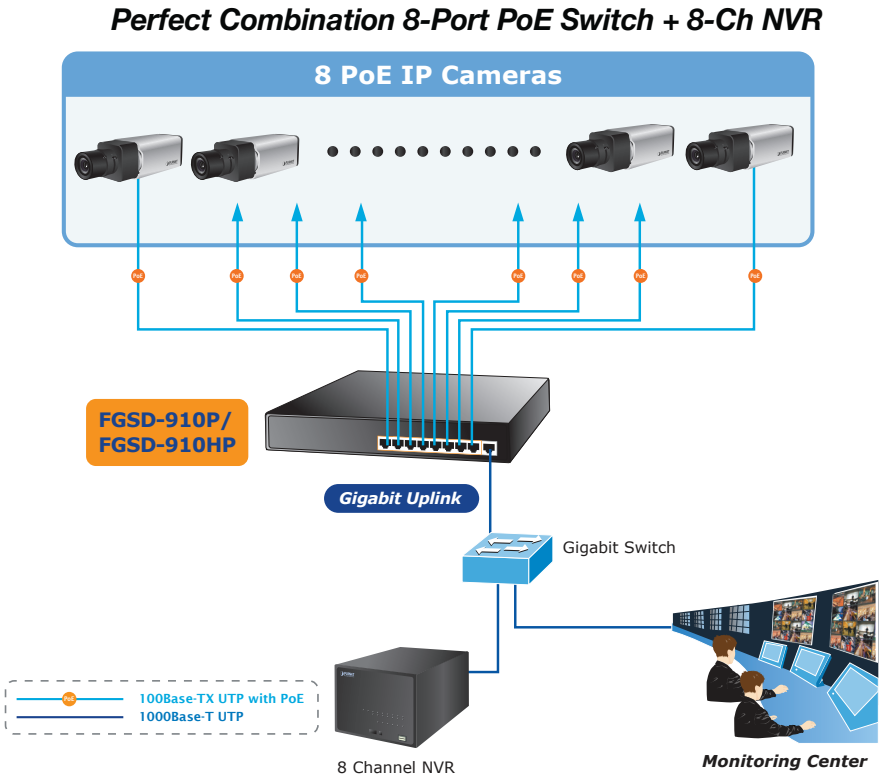


Figure 2-8: 802.3af IP Surveillance with NVR Connection

Note

Cable distance for switch

The cable distance between the PoE Ethernet Switch and other network equipment should not exceed 100 meters for UTP/STP cable.

Make sure the wiring is correct

It can use Category 3/4/5 cable in 10Mbps operation. To reliably operate your network at 100Mbps or 1000Mbps, you must use an Unshielded Twisted-Pair (UTP) Category 5/5e/6 cable, or better Data Grade cabling. While a Category 3 or 4 cable may initially seem to work, it will soon cause data loss.

2.5.2 IP Office Department / Workgroup PoE Switch

With the business office expansion, the additional telephones required could be installed in less cost via the implementation of PoE IP Telephony system than that of the traditional circuit wiring telephony system. The PoE Ethernet Switch helps enterprises to create an integrated data, voice, and powered network. The IEEE 802.3af compliant IP Phones can be installed without the need of an additional power cable because the power can be provided via the standard Ethernet cable from the connected PoE Ethernet Switch.

The Wireless AP group, PoE IP Phones and Analog Telephony Adapter work perfectly with the PoE Ethernet Switch which injects power through the Ethernet cables. With the PoE Ethernet Switch, IP Telephony deployment becomes more reliable and cost effective, which helps enterprises save tremendous cost when upgrading from the traditional telephony system to IP Telephony communications infrastructure.

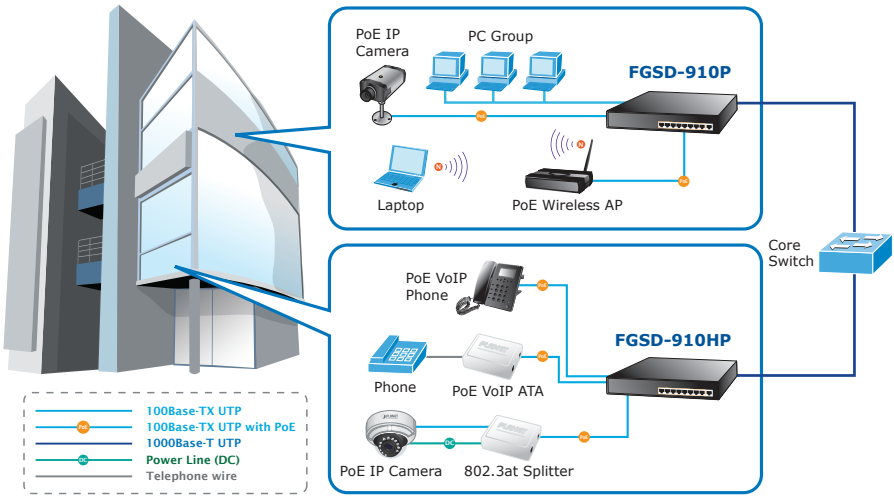
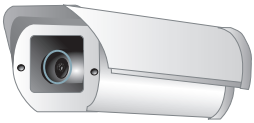


Figure 2-9: IP Office Department / Workgroup PoE Switch Connection

2.6 Power over Ethernet Powered Device

3~5 watts	**Voice over IP phones** Enterprise can install POE VoIP Phone, ATA and other Ethernet/non-Ethernet end-devices to the central where UPS is installed for un-interrupt power system and power control system.
6~12 watts	**Wireless LAN Access Points** Museum, Sightseeing, Airport, Hotel, Campus, Factory and Warehouse can install the Access Point anywhere with no hesitation.
10~12 watts 	**IP Surveillance** Enterprise, Museum, Campus, Hospital, and Bank can install IP Camera without limits of installation location. It needs no electricians to install AC sockets.
3~12 watts	**PoE Splitter** PoE Splitter splits the PoE 48V DC over the Ethernet cable into 5/12V DC power output. It frees the device deployment from restrictions due to power outlet locations, which eliminate the costs for additional AC wiring and reduces the installation time.
30 watts	**High Power Speed Dome (FGSD-910HP only)** This state-of-the-art design is considerable to fit in various network environments like traffic centers, shopping malls, railway stations, warehouses, airports, and production facilities for the most demanding outdoor surveillance applications- no need electrician to install AC sockets.

Note

Since the FGSD-910P / FGSD-910HP per PoE port supports 48V / 56V DC PoE power output, please check and assure the Powered Device's (PD) acceptable DC power range is from 48V / 56V DC. Otherwise, it will damage the Powered Device (PD).

3. Power over Ethernet Overview

What is PoE?

The PoE is an abbreviation of Power over Ethernet; the PoE technology means a system to pass electrical power safely, along with data on Ethernet UTP cable. The IEEE standard for PoE technology requires Category 5 cable or higher for high power PoE levels, but can operate with category 3 cable for low power levels. Power is supplied in common mode over two or more of the differential pairs of wires found in the Ethernet cables and comes from a power supply within a PoE-enabled networking device such as an Ethernet switch or can be injected into a cable run with a mid-span power supply.

The original IEEE 802.3af-2003 PoE standard provides up to 15.4 W of DC power (minimum 44 V DC and 350mA) to each device. Only 12.95 W is assured to be available at the powered device as some power is dissipated in the cable.

The updated IEEE 802.3at-2009 PoE standard also known as PoE+ or PoE plus provides up to 25.5 W of power. The 2009 standard prohibits a powered device from using all four pairs for power

The 802.3af / 802.3at define two types of source equipment: Mid-Span and End-Span.

Mid-Span

Mid-Span device is placed between legacy switch and the powered device. Mid-Span is tap the unused wire pairs 4/5 and 7/8 to carry power; the other four is for data transmit.

End-Span

End-Span device is directly connecting with powered device. End-Span could also tap the wire 1/2 and 3/6.

PoE System Architecture

The specification of PoE typically requires two devices: **the Powered Source Equipment (PSE)** and the **Powered Device (PD)**. The PSE is either an End-Span or a Mid-Span, while the PD is a PoE-enabled terminal, such as IP Phones, Wireless LAN, etc. Power can be delivered over data pairs or spare pairs of standard CAT-5 cabling.

Powered Source Equipment (PSE)

Power sourcing equipment (PSE) is a device such as a switch that provides (sources) power on the Ethernet cable. The maximum allowed continuous output power per cable in IEEE 802.3af is 15.40 W. A later specification, IEEE 802.3at, offers 25.50 W. When the device is a switch, it is commonly called an End-span (although IEEE 802.3af refers to it as endpoint). Otherwise, if it's an intermediary device between a non PoE capable switch and a PoE device; it's called a Mid-span. An external PoE injector is a Mid-span device.

Powered device

A powered device (PD) is a device powered by a PSE and thus consumes energy. Examples include wireless access points, IP Phones, and IP cameras. Many powered devices have an auxiliary power connector for an optional, external, power supply. Depending on the PD design, some, none, or all power can be supplied from the auxiliary port, with the auxiliary port sometimes acting as backup power in case of PoE supplied power failure.

How Power is Transferred Through the Cable

A standard CAT5 Ethernet cable has four twisted pairs, but only two of these are used for 10BASE-T and 100BASE-TX. The specification allows two options for using these cables for power, shown in Figure 3-1 and Figure3-2:

The spare pairs are used. Figure 3-1 shows the pair on pins 4 and 5 connected together and forming the positive supply, and the pair on pins 7 and 8 connected and forming the negative supply. (In fact, a late change to the spec allows either polarity to be used).

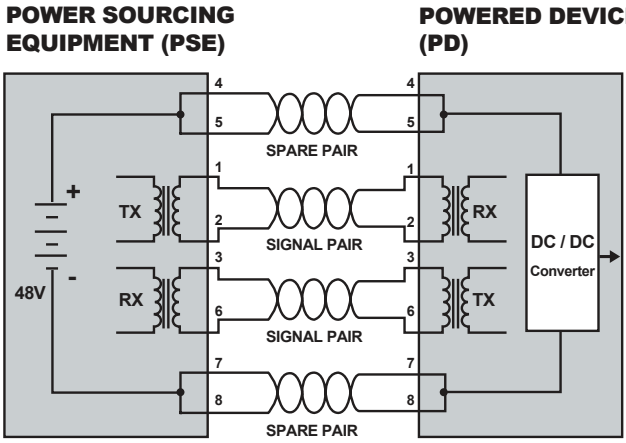


Figure 3-1: Power Supplied over the Spare Pins

The data pairs are used. Since Ethernet pairs are transformer coupled at each end, it is possible to apply DC power to the center tap of the isolation transformer without upsetting the data transfer. In this mode of operation the pair on pins 3 and 6 and the pair on pins 1 and 2 can be of either polarity.

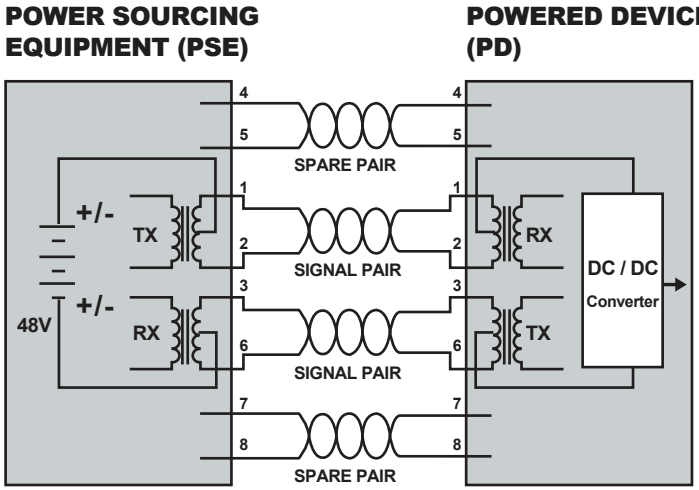


Figure 3-2: Power Supplied over the Data Pins

4. Troubleshooting

This chapter contains information to help you solve issues. If the PoE Ethernet Switch is not functioning properly, make sure the PoE Ethernet Switch was set up according to instructions in this manual.

The Link LED is not lit
Solution:

Check the cable connection and remove duplex mode of the PoE Ethernet Switch.

Performance is bad
Solution:

Check the speed duplex mode of the partner device. The PoE Ethernet Switch is run at Auto-negotiation mode and if the partner is set to half duplex, then the performance will be poor.

1000Base-T port link LED is lit, but the traffic is irregular
Solution:

Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.

Why the PoE Ethernet Switch doesn't connect to the network
Solution:

Check the LNK/ACT LED on the PoE Ethernet Switch. Try another port on the PoE Ethernet Switch. Make sure the cable is installed properly and make sure the cable is the right type. Turn off the power. After a while, turn on power again.

Why I connect my PoE device to PoE Ethernet Switch and it cannot power on
Solution:

1. Please check the cable type of the connection from the PoE Ethernet Switch (port 1 to port 8) to the other end. The cable should be an 8-wire UTP, Category 5 or above, EIA568 cable within 100 meters. A cable with only 4-wire, short loop or over 100 meters will affect the power supply.
2. Please check and assure the device is fully complied with IEEE 802.3af standard (FGSD-910P).
3. Please check and assure the device is fully complied with IEEE 802.3af / 802.3at standard (FGSD-910HP).

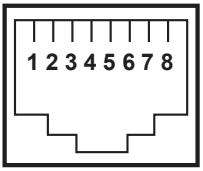
What is the power output of each PoE port?
Solution:

FGSD-910P: each PoE port supports 48V DC, 350mA, max 15.4 watts power output. Detect and inject by the standard of IEEE 802.3af.

FGSD-910HP: each PoE port supports 56V DC, 600mA, max 30 watts power output. Detect and inject by the standard of IEEE 802.3at.

Appendix: A Networking Connection

A.1 PoE RJ-45 Port Pin Assignments



PIN NO	RJ-45 POWER ASSIGNMENT
1	Power +
2	Power +
3	Power -
6	Power -

A.2 Switch's Data RJ-45 Pin Assignments - 1000Mbps, 1000Base-T

PIN NO	MDI	MDI-X
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

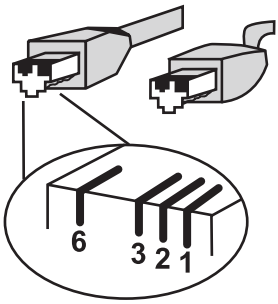
Implicit implementation of the crossover function within a twisted-pair cable, or at a wiring panel, while not expressly forbidden, is beyond the scope of this standard.

A.3 10/100Mbps, 10/100Base-TX

When connecting your PoE Ethernet Switch to another Fast Ethernet switch, a bridge or a hub and a straight or crossover cable are necessary. Each port of the Switch supports auto-MDI/MDI-X detection. That means you can directly connect the Switch to any Ethernet devices without making a crossover cable. The following table and diagram show the standard RJ-45 receptacle/ connector and their pin assignments:

RJ-45 Connector Pin Assignment		
PIN NO	MDI Media Dependant Interface	MDI-X Media Dependant Interface-Cross
1	Tx + (transmit)	Rx + (receive)
2	Tx - (transmit)	Rx - (receive)
3	Rx + (receive)	Tx + (transmit)
4, 5	Not used	
6	Rx - (receive)	Tx - (transmit)
7, 8	Not used	

The standard cable, RJ-45 pin assignment



The standard RJ-45 receptacle/connector

There are 8 wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and color of straight cable and crossover cable connection:

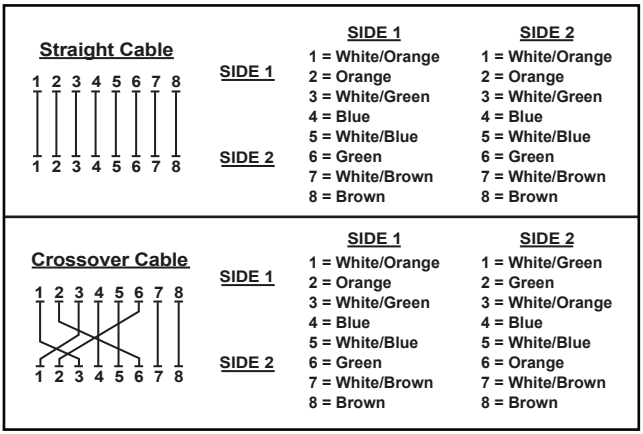


Figure A-1: Straight-through and Crossover Cables

Please make sure your connected cables are with same pin assignment and color as the above picture before deploying the cables into your network.

EC Declaration of Conformity

For the following equipment:

*Type of Product : 8-Port 10/100Mbps 802.3af PoE + 1-Port 10/100/1000Mbps Desktop Switch

*Model Number : FGSD-910P

* Produced by:
Manufacturer's Name : **Planet Technology Corp.**
Manufacturer's Address : 10F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.).

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive on (2004/108/EC).
For the evaluation regarding the EMC, the following standards were applied:

EN55022		(2010)
EN 61000-3-2		(2006 + A1:2009 + A2:2009)
EN 61000-3-3		(2008)
EN55024		(2010)
	IEC 61000-4-2	(2008)
	IEC 61000-4-3	(2010)
	IEC 61000-4-4	(2012)
	IEC 61000-4-5	(2005)
	IEC 61000-4-6	(2008)
	IEC 61000-4-8	(2009)
	IEC 61000-4-11	(2004)
EN60950-1		(2006 + A11:2009 + A1:2010 + A12:2011

Responsible for marking this declaration if the:

☒ **Manufacturer** ☐ **Authorized representative established within the EU**

Authorized representative established within the EU (if applicable):

Company Name: **Planet Technology Corp.**

Company Address: **10F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)**

Person responsible for making this declaration

Name, Surname **Kent Kang**

Position / Title : **Product Manager**

Taiwan	18th June, 2013	
Place	*Date*	*Legal Signature*

EC Declaration of Conformity

For the following equipment:

*Type of Product : 8-Port 10/100Mbps 802.3at PoE + 1-Port 1000Mbps Desktop Switch

*Model Number : FGSD-910HP

* Produced by:
Manufacturer's Name : **Planet Technology Corp.**
Manufacturer's Address : 10F., No.96, Minquan Rd., Xindian Dist.,
New Taipei City 231, Taiwan (R.O.C.).

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive on (2004/108/EC).
For the evaluation regarding the EMC, the following standards were applied:

EN55022		(2010 + AC:2011)
EN 61000-3-2		(2006 + A1:2009 + A2:2009)
EN 61000-3-3		(2008)
EN55024		(2010)
	IEC 61000-4-2	(2008)
	IEC 61000-4-3	(2010)
	IEC 61000-4-4	(2012)
	IEC 61000-4-5	(2005)
	IEC 61000-4-6	(2008)
	IEC 61000-4-8	(2009)
	IEC 61000-4-11	(2004)
EN60950-1		(2006 + A11:2009 + A1:2010 + A12:2011

Responsible for marking this declaration if the:

☒ **Manufacturer** ☐ **Authorized representative established within the EU**

Authorized representative established within the EU (if applicable):

Company Name: **Planet Technology Corp.**

Company Address: **10F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)**

Person responsible for making this declaration

Name, Surname **Kent Kang**

Position / Title : **Product Manager**

Taiwan	**10th Feb., 2014**	Kent Kang
Place	*Date*	*Legal Signature*

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